

Two new species of ptyctimous mites (Acari: Oribatida) from Ghana

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Twelve species of ptyctimous mites (Acari: Oribatida) are recorded from Ghana for the first time. Two new species are described and illustrated: *Phthiracarus bicarinatus* sp. nov. and *Austrophthiracarus lacunosus* sp. nov. Three species are recorded from West Africa for the first time.

Key words: Acari, Oribatida, Phthiracaridae, Steganacaridae, new species, Ghana.

INTRODUCTION

Two natural reserves in Ghana were explored from 24 August to 4 September 2006 by an international group of biodiversity experts within the Rapid Assessment Program. The reserves were: Ajenjua Bepo (06°22'2.3"N, 01°01' 58.6"W, elevation 300 m a.s.l.) and Mamang (06°15'02"N, 01°02'25.7"W, 130 m a.s.l.) River Forest Reserves located in the Birim North District of the Eastern Region of Ghana. The first reserve was established in 1930 and is presently a small reserve (5.69 km²) with small patches of original moist semi-deciduous forest, the second reserve was established in 1938 and is much larger (53 km²) and comprises moist semi-deciduous forest. Both reserves lie in the Guinean Forests of West Africa Hotspot, as classified by Conservation International (McCullough *et al.*, in press). M. Bąkowski, a specialist in butterflies and moths from the Department of Systematic Zoology, Adam Mickiewicz University of Poznań, collected two samples of soil and litter from both reserves. Besides a few known species, I have found two new species of ptyctimous mites (living in litter and decaying wood and feeding on dead organic matter of plant origin). The descriptions of these species is the purpose of this paper.

All types are deposited in the Department of Animal Taxonomy and Ecology, Poznań, Poland.

The terminology is based on that of Niedbala (2001).

NEW RECORDS

Mamang River Forest Reserve

Mesoplophora (*Mesoplophora*) *africana* Balogh, 1958 (63 specimens), *Indotritia eksteeni* Niedbala, 2006

(121), *Acrotrititia ardua* (C.L. Koch, 1841) (45), *Acrotrititia spiculifera* Mahunka, 1991 (20), *Phthiracarus bicarinatus* sp. nov. (5), *Phthiracarus parabaloghi* Niedbala, 1983 (5), *Arphthiracarus notatus* Niedbala, 2001 (3), *Atropacarus* (*Hoplophorella*) *cucullatus* (Ewing, 1909) (1), *Atropacarus* (*Hoplophorella*) *vitrinus* (Berlese, 1913) (24).

Ajenjua Bepo Forest Reserve

Mesoplophora (*Mesoplophora*) *africana* (57 specimens), *Indotrititia eksteeni* (47), *Acrotrititia ardua* (14), *Acrotrititia munita* Niedbala, 2006 (7), *Acrotrititia spiculifera* (18), *Austrophthiracarus lacunosus* sp. nov. (2), *Protaphthiracarus dignus* (Niedbala, 1983) (4), *Atropacarus* (*Hoplophorella*) *vitrinus* (4).

Remarks

The first of the two new species belongs to the genus *Phthiracarus*, a relatively speciose taxon (15 known species) that is broadly distributed in the Ethiopian Region. The second one belongs to the genus *Austrophthiracarus*, which has been represented hitherto only by two species in the Ethiopian Region, distributed in the eastern part of Central Africa (Niedbala 2001).

For all species found the new records extend their ranges of occurrence, and none of the ptyctimous mites species has been noted from Ghana (Niedbala 1998, 2001, 2008). Three species have been found for the first time in West Africa: *Arphthiracarus notatus* has hitherto been reported only from Gabon, and the other two species *Indotrititia eksteeni* and *Acrotrititia munita* have been reported only from South Africa (Niedbala 2006).

The chaetome of trochanter and femur of *Phthiracarus parabaloghi* is presented in Fig. 1G.

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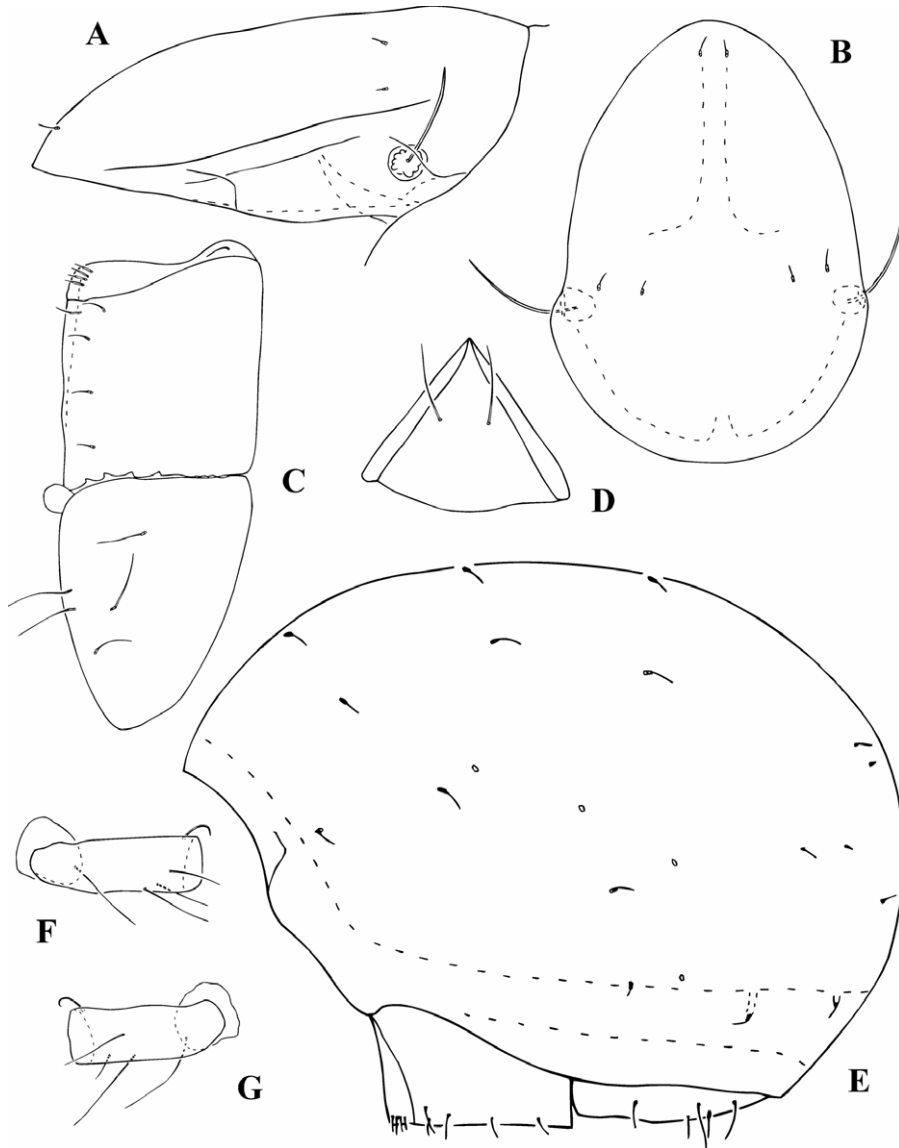


Fig. 1. A–F: *Phthiracarus bicarinatus* (holotype); **A**, prodorsum, lateral view; **B**, prodorsum, dorsal view; **C**, genitoaggenital and anoadanal plates; **D**, mentum of infracapitulum; **E**, lateral view of opisthosoma; **F**, trochanter and femur of leg I. **G:** *Phthiracarus parabaloghi* (specimen from Mamang), trochanter and femur of leg I.

DESCRIPTION OF SPECIES

Phthiracarus bicarinatus n.sp., Fig. 1A–F

Description

Measurements of holotype. Prodorsum: length 353 μ m, width 252, height 141, sensillus 76, rostral setae 10; notogaster: length 687, width 475, height 485, setae c_1 8; genitoaggenital plate 142 \times 131, anoadanal plate 177 \times 119.

Colour. Grey-yellow. Cuticle densely dotted.

Prodorsum with two lateral carinae, superior distinct and long, inferior feeble and shorter. Sigillar fields poorly visible, median field very narrow. Sensilli long, smooth, slightly tapering at distal point. Setae fine, minute, rostral setae located close each other.

Notogaster with minute, fine setae. Setae c_1 and c_2 remote from anterior border, setae c_3 near the border. Vestigial setae f_1 posteriorly of h_1 setae. All

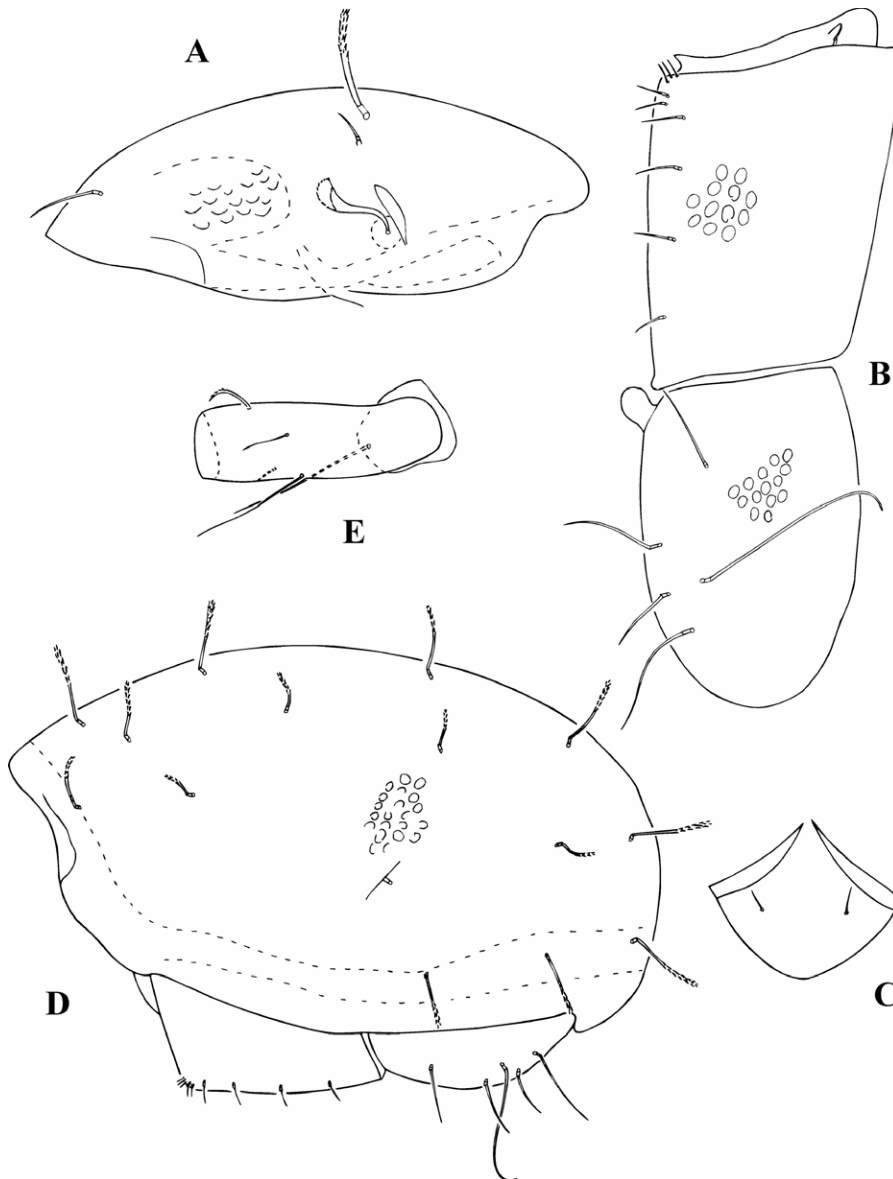


Fig. 2. *Austrophthiracarus lacunosus* (holotype); **A**, prodorsum, lateral view; **B**, genitoaggenital and anoadanal plates; **C**, mentum of infracapitulum; **D**, lateral view of opisthosoma; **E**, trochanter and femur of leg I.

lyrifissures *ia*, *im*, *ip*, *ips* are present.

Ventral region. Formula of genital setae: 4+1: 4. Setae of anoadanal plates well developed, anal setae close each other; $ad_2 > ad_3 > ad_1 > an$.

Legs. Chaetome of legs of 'complete type', setae *d* of femora I situated at anterior end of the article.

Etymology. The specific name *bicarinatus* refers to the two pairs of lamellar carinae of prodorsum.

Type material. Holotype and four paratypes: Ghana, Mamang River Forest Reserve, litter of

moist semi-deciduous forest, 31.08. 2006, leg. M. Bąkowski.

Comparison. This species is similar to *Phthiracarus neonominatus* Subias, 2004 (*nom. nov.* for *Microphthiracarus baloghi* Mahunka, 1982 *nec* Feider *et* Suciu, 1957) from Ethiopia and *Phthiracarus anakolos* Niedbala, 2006 from South Africa in the presence of similar, minute setae. It is easily distinguishable by the presence of two pairs of lateral carinae of prodorsum, four pairs of lyrifissures and

a different arrangement of genital setae (setae g_6 situated at level of g_5 setae). Furthermore *P. neominatus* has a large distance between anal setae at anoadanal plates and *P. anokolos* considerably shorter setae of anoadanal plates.

***Austrophthiracarus lacunosus* n. sp.,**

Figs 2A–E

Description

Measurements of holotype. Prodorsum: length 328 μm , width 227, height 131, sensillus 66, setae: interlamellar 81, lamellar 20, rostral 56; notogaster: length 626, width 323, height 343, setae c_1, h_1, ps_1 76, $c_1/c_1-d_1 = 0.57$; genitoaggenital plate 182×136 , anoadanal plate 197×126 .

Colour. Brown.

Surface of body covered with deep concavities.

Prodorsum without lateral carinae. Sigillar fields narrow. Sensilli short with claviform, rounded head covered with small spines. Interlamellar setae thick, covered with small spines in distal half, similar to notogastral setae. Lamellar setae very short, spiniform. Rostral setae spiniform but longer. Exobothridial setae vestigial or absent.

Notogaster with 15 pairs of rather short ($c_1 < c_1-d_1$) setae, ciliate and slightly thicker in distal half. Setae c_1 remote from anterior border, setae c_3 situated near anterior border. Vestigial setae and lyrifissures invisible.

Ventral region. Setae h of mentum considerably shorter than distance between them. Formula of genital setae: 4+2: 5. Anoadanal plates with five pairs of rough setae. Setae ad_2 the longest and curved distally. Other setae spiniform, setae ad_1 longer than anal and ad_3 setae.

Legs. Chaetome of legs of 'complete type', setae d

of femora I slightly remote from anterior end of the article.

Etymology. The specific name *lacunosus* is Latin for full of pits, pitted and alludes to the deeply foveolate surface of the body.

Type material. Holotype and one paratype. Ghana, Ajenjua Bepo Forest Reserve, litter of moist semi-deciduous forest, 24. 08. 2006, leg. M. Bąkowski.

Comparison. The new species is easy distinguishable from congeners by the shape of sensilli, heterotrichous interlamellar and lamellar setae, shape of ad_2 setae, very short setae h of infracapitular mentum.

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